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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,441	01/21/2004	Christian Buchler	RCA89,866	3041

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EXAMINER

PATEL, GAUTAM

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,441

Applicant(s)

BUCHLER ET AL.

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/438,931.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-18 are pending for the examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Buchler et al., US. patent 6,266,305 (hereafter Buchler) in view of Milton et al., US. patent 3,659,229 (hereafter Milton).

As to claim 1 Buchler, discloses the invention as claimed [see Figs. 1-10], including a tracking device, a four quadrant detector, and delay elements comprising:

- a. a tracking device [fig. 1, unit 13];
- b. a four-quadrant detector [fig. 1, unit 5];
- c. two summation points [fig. 1 first summation point 15 and second summation point 16]; and

d. a phase comparator [fig. 1, unit 14] for tracking in accordance with the differential phase detection method, and variable delay elements [fig. 1, units 26A, 26B, 26C and 26D] that can be set by a control device [fig. 1, unit 24; control device],

at least one of said variable delay elements is arranged between one of said summation points for output signals of detector elements of the four-quadrant detector and said phase comparator, and in that at least one of said variable delay elements is arranged between four-quadrant detector and summation point, [col. 5, line 49 to col. 6, line 43];

Buchler discloses all of the above elements, including delay elements in proper places and summation points as claimed. In addition, Buchler implies that he has both analog and digital delay elements. He is doing that by clearly disclosing that that the delay elements 26 [26A, 26B etc.] are controlled via four digital-to-analog converters, or advantageously, in a directly digital manner. [col. 14, lines 28-40]. In other words, Buchler very clearly indicates that his system can work with BOTH analog and digital delay elements and he also indicates advantages of using either one of them in his system. If one needs analog variable delay elements, his system does not use analog-to-digital converter, and if system needs digital delay elements than one can simply use analog-to-digital converter in front of variable digital delay elements [as presently shown by Buchler].

It should also be pointed out that Buchler is controlling phase and amplitude exactly as the Applicants disclosure. Buchler is silent about specific element [i.e. analog or digital] in a specific place and Buchler does not disclose that at least one

of said delay elements is an analog delay element. Buchler discloses delay elements without qualifying them to the type of elements.

However Milton clearly teaches that analog and digital delay elements are well known in the art for improvement of the system performance and for multi-step attenuation when desired (see col. 5, lines 25-49). Milton also clearly teaches that analog and digital delays are interchangeable and one can easily be converted into another type by use of well know analog-to-digital converter [col. 5, lines 15-48; Milton].

One of ordinary skill in the art at the time of invention would have been motivated to use either type of delay elements depending upon system requirement such as multi-step attenuation.

Therefore, it would have been obvious to one ordinary skill in the art, at the time of invention to have used variable analog and digital delay in Buchler's system as taught by Milton in order to provide proper variable delays for proper functions with the help of digital-to-analog converter that is already being taught by Buchler [col. 14, lines 28-40].

5. The aforementioned claim 2, recites the following elements, inter alia, disclosed in Buchler:

respective digital delay elements of variable delay elements are assigned to the summation points, and in that a switching device is present for the purpose of connecting one of the digital delay elements to an output of an offset determining device [col. 5, line 49-65 and col. 9, line 49 to col. 10, line 5].

6. The aforementioned claim 3, recites the following elements, inter alia, disclosed in Buchler:

a switching device [fig. 1, units 19 and 19'] is present for the purpose of inserting a digital delay element of variable delay elements between one of the summation points and the phase comparator [col. 6, line 51 to col. 7, line 29].

7. The aforementioned claim 4, recites the following elements, inter alia, disclosed in Buchler:

a switching device is present for connecting two of the variable detector elements of the four-quadrant detector to respective analog delay elements [col. 9, line 49 to col. 10, line 41].

8. The aforementioned claim 5, recites the following elements, inter alia, disclosed in Buchler:

that an interference signal generating device is present, whose output is connected to the tracking device and to a first input of the control device [fig. 1, unit 24], whose second input is connected to the output of the phase comparator [fig. 1, unit 20] [col. 6, line 49 to col. 7, line 29].

9. The aforementioned claim 6, recites the following elements, inter alia, disclosed in Buchler:

the control device has a comparison device, at whose inputs the output signal of the phase comparator and the output signal of the interference signal generating device are present and whose output signal serves for setting at least

one analog delay element of the variable delay elements [col. 5, lines 49-65; col. 9, line 1-25 and col. 9, lines 49-63].

10. The aforementioned claim 7, recites the following elements, inter alia, disclosed in Buchler:

a control output, of the control device, at which an output signal is present, is assigned a circuit block, which determines at least one of absolute value and sign of the signal present at the control output [col. 9, line 1-25 and col. 9, lines 49-63].

11. The aforementioned claim 8, recites the following elements, inter alia, disclosed in Buchler:

a converter [fig. 1, unit 19] is connected between a digital delay element of the variable delay elements and one of summation points [col. 6, line 58 to col. 7, line 29].

12. The aforementioned claim 9, recites the following elements, inter alia, disclosed in Buchler:

the control device and at least some of the variable delay elements are realized on an integrated circuit [col. 2, lines 58-67].

13. The aforementioned claim 10, recites the following elements, inter alia, disclosed in Buchler:

the control device has an offset determining device [fig. 1, unit 48], at whose input the output signal of the phase comparator is present and whose output

signal serves for setting at least one digital delay element of the variable delay elements [col. 9, lines 1-25 and col. 9, line 64 to col. 10, line 41].

14. As to claims 11-18, they are duplicate claims corresponding to claims 2-9 respectively and they are therefore rejected for the same reasons set forth in the rejection of claims 2-9 respectively, supra.

NOTES/REMARKS

15. The statement presented in the remarks does not positively recite that Buchler [patent 6,266,305] was commonly assigned at the time of invention. In its present form it is not clear which patent was commonly owned in third paragraph of page of remarks.

Other prior art cited

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Tanaka et al. (US. Patent 4,785,441) "Tracking error correction".

Contact Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is 571-272-7625. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

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Art Unit: 2655


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The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is 703-872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Wayne Young can be reached on (571) 272-7582.

Any inquiry of a general nature or relating to the status of this application should be directed to the Electronic Business Center whose telephone number is 866-217-9197 or the USPTO contact Center telephone number is (800) PTO-9199.

Gautam R. Patel
Primary Examiner
Group Art Unit 2655


GAUTAM R. PATEL
PRIMARY EXAMINER

July 17, 2005